

International application No.
PCT/JP03/ 13494

A. CLASSIFICATIONOF SUBJECT MATTER

Int.Cl⁷ C22C33/04,33/02,38/00,C21D6/00,B22F1/00,9/04,H01L41/20,F25B21/00 B22D11/00,11/06,11/106,11/124,13/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C22C33/04,33/02,38/00,C21D6/00,B22F1/00,9/04,H01L41/20,F25B21/00 B22D11/00,11/06,11/106,11/124,13/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Japanese Utility Model Gazette 1926-1996, Japanese Publication of Unexamined Utility Model Applications 1971-2004, Japanese Registered Utility Model Gazette 1994-2004, Japanese Gazette Containing the Utility Model 1996-2004

Flectronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Electronic da	ta base consulted during the international search (name o	f data base and, where practicable, search te	erms used)
C. DOÇUN	MENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where ap	opropriate, of the relevant passages	Relevant to claim No.
x x x	JP 2000-54086 A(KAZUAKI FUKAMICHI)2000.02.22 claim1-9, example (Family:none) JP 2002-356748 A(K.K. TOSHIBA)2002.12.13 claim1-8, example 1(Family:none) JP 2003-96547 A(K.K. TOSHIBA)2003.04.03 claim1-7, example (Family:none) JP 2002-69596 A(KAZUAKI FUKAMICHI)2002.03.08 claim1-9, example (Family:none)		10,11 10,12 10,12,13,15 ,16 21
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* Special	r documents are listed in the continuation of Box C. categories of cited documents: ent defining the general state of the art which is not red to be of particular relevance	"T" later document published after the priority date and not in conflict with understand the principle or theory u	the application but cited to
"E" earlier a national "L" docume is cited special "O" docume means "P" docume	red to be of particular relevance application or patent but published on or after the inter- int which may throw doubts on priority claim(s) or which to establish the publication date of another citation or other reason (as specified) int referring to an oral disclosure, use, exhibition or other the published prior to the international filing date but later to priority date claimed	"X" document of particular relevance; the be considered novel or cannot be inventive step when the document is "Y" document of particular relevance; the be considered to involve an inventive combined with one or more othe combination being obvious to a pers	e claimed invention cannot considered to involve an s taken alone e claimed invention cannot e step when the document is er such documents, such on skilled in the art
Date of the a	ctual completion of the international search	Date of mailing of the international search	2004
Japan Patent Office		Authorized officer TAKESHI INOUE	4K 9269
3-4-3, Kasu	- ımigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Telephone No. +81-3-3581-1101 Ext. 3435	